Observatory Manager – GS-14 – UNOFFICIAL

MAJOR DUTIES

The Observatory Manager is responsible for planning, organizing, and directing all aspects of the observatory, spanning diverse disciplines, which are necessary for the successful definition and development of the mission. The major duties of the incumbent include:

a. Develops the overall plan for the definition and development of the observatory. The observatory includes the spacecraft bus, mission-unique equipment, applications software, and the integration of the payload instrument. The plan includes cost, schedule, division, and assignment of technical tasks and all technical and management interfaces.

b. Prepares all budgetary requirements for the project-funded elements of the observatory including mission-unique equipment, applications software, and integration and test hardware.

c. Serves as the Contracting Officer's Technical Representative (COTR) for the mission contract and is responsible for all decisions involved in the definition, development, integration, and test of the observatory. Directs technical analyses and engineering efforts which will assure the mission will meet all of its unique objectives. Exercises a high degree of originality and sound engineering judgment in decisions made for the program since these decisions, which are considered authoritative, are binding on GSFC, and if erroneous, could prove catastrophic to the Project mission objectives.

d. Prepares top-level schedule requirements for the observatory. Reviews detailed schedules developed by the contractor. Where necessary, prepares workaround plans to eliminate schedule conflicts. Responsible for ensuring that each subsystem schedule is compatible with the top-level schedule.

e. Formulates requirements to be met by the mission contractor and assures overall progress in meeting the requirements. Evaluates the work performed and procedures used by the mission contractor to determine progress in achieving the stated objective, and/or investigates areas in need of improvement and makes decisions involving the tradeoffs between schedule, cost, and technical performance.

f. Evaluates the mission contractor's and support contractor's technical and cost performance by reviewing the Performance Measurement System (PMS) and forming conclusions based on his/her own technical and managerial knowledge and that of other project members and the GSFC support people. In conjunction with other project personnel, the Observatory Manager makes changes to the PMS to improve this system for use by the project staff. If performance is inadequate, he/she must take steps with the mission contractor to correct it by directing changes. Evaluates performance for the purpose of determining award fee. Presents

his findings to the Performance Evaluation Board (PEB) for their fee determination on the contractor's performance. Serves as technical consultant to the PEB.

g. Participates in the identification and resolution of critical and potential problem areas in the programmatic interfaces between the spacecraft, instruments, and other government-furnished equipment to make certain that the program requirements are met within cost and schedule constraints. Collaborates with other senior project management personnel in the planning and review of other project elements, which include spacecraft subsystems, ground data systems, instruments, and mission operations.

h. Manages all aspects of the accommodation of instruments on the observatory including spacecraft resource allocation agreements and associated documentation, instrument interface requirements, and interface control documentation. Ensures that the instruments are satisfactorily accommodated on the observatory, and that the observatory, as an integrated system, meets mission requirements. Chairs and leads spacecraft-to-instrument interface meetings throughout the definition, development, design, integration, and testing phases of the observatory.

i. Represents the project in various working group meetings, including science panels, providing the project perspective on instrument observatory development and instrument accommodation issues. Provides guidance to these panels to enable them to constrain the science requirements in a manner that will result in an instrument with a design achievable within cost budgets and with engineering performance requirements consistent with spacecraft capabilities.

Develops on-orbit observatory operations scenarios and plans based upon instrument science objectives and equipment operating capabilities to ensure the health and safety of the observatory and optimum science benefit. Works with the Operations System contractor and Flight Operations Team to plan and conduct efficient compatibility testing with the ground system during observatory integration and test, and efficient on-orbit operations.

j. Evaluates instrument configuration and spacecraft layouts for consistency with instrument optical and thermal viewing requirements, and continuously reviews spacecraft systems and subsystems for adequacy to meet instrument requirements.

k. Provides the instrument project team with recommendations/decisions regarding the instrument that involve programmatic cost decisions, implementation planning, and anticipated spacecraft design ramifications.

l. Continuously evaluates planned spacecraft I&T and launch flow requirements, and transforms derived requirements into instrument implementation requirements for overall systems integration of the observatory.

m. Plans, organizes, and guides the efforts of a GSFC team and other GSFC support contractors to aid in the design of the observatory and evaluate the work of the mission contractor. Negotiates with the GSFC Division Chiefs and Branch Heads for this support; coordinates the work between the spacecraft contractor, support contractors, and the GSFC team, and resolves disagreements among these groups.

n. Plans and controls the development of interface control documents and remains cognizant of the effects the observatory subsystems have on other systems, including interface requirements on the instruments. Responsible for assuring the proper performance of the observatory as a complete system.

o. Determines the types of functions and activities needed to successfully carry out the observatory development program and establishes policies for their implementation. Ascertains the variety of experience and skills necessary to perform the multifaceted tasks required to manage the mission contractor and other activities related to observatory development.

p. Visits the mission contractor plant to assess progress and to evaluate technical and programmatic problems that may arise. Makes decisions to redirect contractor efforts as necessary.

q. Prepares reports that relate to observatory development definition, progress, schedule, and costs. Represents the project, GSFC, and agency on committees and in meetings as a recognized authority in the area of observatory development.

r. The incumbent is responsible to his/her supervisor for assuring that the work assignments of other employees are carried out by performing a range of duties such as:

- Distribute and balance the workload among employees in accordance with established work flow or job specialization, and assure timely accomplishment of work.

- Instruct employees in specific tasks and job techniques and make available written instructions, reference materials, and supplies.

- Give on-the-job training to new employees in accordance with established procedures and practices.

- Maintain current knowledge and answer questions of other employees on procedures, policies, directives, etc., and obtain needed information or decisions from supervisor on problems that come up.

- Check on work in progress, spot check, and review completed work to see that supervisor's instructions on work sequence, methods, procedures, and deadlines have been met.

- Amend or reject work not meeting established standards, referring unusual situations to supervisor.

- Report to supervisor on performance, progress, and training needs of employees.

- Make "information suggestions" to supervisor as requested concerning promotion, reassignment, recognition, and personnel needs.

- Make recommendations concerning performance appraisals of employees in the work unit as requested by the supervisor.

Factor 1: Knowledge Required by the Position

a. A degree in an appropriate field of engineering, physical science, or mathematics is required to apply the professional theories, practices, principles, and techniques of aerospace technology to plan, develop, and implement the observatory design, fabrication, integration, and test.

b. A broad technical knowledge of the tasks, concepts, and techniques of spacecraft and science instrument fabrication, integration, and test to direct the design, development, integration, test, and launch of the observatory.

c. Knowledge of the duties and responsibilities of a technical officer on large contracts with a major aerospace company; knowledge of cost control techniques such as performance measurement systems; knowledge of procurement regulations; skill in analyzing financial data to understand the cost status of the contract and budget for changes.

d. Knowledge of proposal evaluation techniques; skill in estimating workforce needs to accomplish tasks; technical knowledge in all spacecraft systems and subsystems; knowledge of techniques and skill in negotiating to evaluate proposed contract changes and negotiate such changes.

e. Knowledge of planning and scheduling techniques and systems such as PERT, Gantt, Project 2; skill in evaluating a schedule for realism to plan; and evaluating the contractor's plan for developing and launching the observatory on schedule.

f. Skill in directing large diverse groups of companies and people such as the observatory contractor, support contractors, and GSFC engineers. Skill in resolving conflicts, delegating tasks, and assigning responsibility to coordinate the work of all the groups contributing to the development of the observatory. Skill in managing many different problems simultaneously.

g. Ability to direct discipline managers and independently provide the direction to technical experts as they perform their duties in support of the observatory development, integration, test, launch, and operations.

h. Skill in communicating orally and in writing to provide briefings, status reviews, and resource requirements to project and to higher management.

i. Ability to plan and organize technical activities

j. Knowledge of government and agency contractual and funding regulations, procedures, and policies.

Factor 2 - Supervisory Controls

a. The Observatory Manager reports to the Deputy Project Manager, who assigns work in terms of program objectives, policy, budget, and schedule, or the incumbent may suggest assignments based on an independent assessment of requirements.

b. Assignments are primarily self-conceived and initiated, and the incumbent may alter approaches and concepts as the program progresses. The incumbent’s decisions and judgments have a far-reaching effect on the success of the mission and are accepted as authoritative within and outside of the agency.

c. Results of his/her work are considered technically and managerially authoritative and are normally accepted without change. His/her work is reviewed in a general sense to assure achievement of mission objectives and compliance with NASA policies.

Factor 3 – Guidelines

The Observatory Manager receives guidelines in the form of mission objectives and NASA's policies and specific guidelines relating to budgetary and schedule restraints.

The incumbent interprets the broad objectives and, as a recognized authority in the area of observatory development, is free to use his/her own judgment to formulate specific requirements and to develop detailed cost, schedule, and technical plans. His/her product is a budgetary allocation by fiscal year, including a contractor performance measurement system; a set of plans for the day-to-day activities; a set of integration, test, and launch procedures; and a set of post launch operational plans and procedures.

Factor 4 – Complexity

The project replaces an existing management system composed of diverse elements both within and external to the GSFC. Both the spacecraft and instrument development efforts face challenges to both technical and cost performance. The Observatory Manager must ensure the timely development of the observatory during this process of transition and within this complex set of organizational constraints. Because of the interactive nature of the observatory design and the potential for change in the interfacing of the instrument, programmatic decision to be made by the Observatory Manager will be both complex and critical for success of the mission.

The Observatory Manager must plan and organize information that is largely undefined. Decisions are made on cost, schedule, and technical risk. Schedule and risk trades are made across interfaces between science instruments, spacecraft contractor, and support contractors. He/she must resolve technical and management differences of opinion between experienced industrial and government managers. This requires an in-depth understanding of the technical factors involved, the management methods for costing and workforce allocation, program objectives, and policies. Skill in managing many different problems simultaneously is required.

Factor 5 - Scope and Effect

The mission is a major program. Proper observatory performance is critical to the success of the mission and the achievement of its scientific objectives.

The purpose of this position is to provide a source of technical expertise and leadership in the design, development, integration, test, and operation of the observatory. The incumbent directs and coordinates several diverse disciplines during the design, development, and integration phases of this effort. By providing expert advice, counsel, guidance and direction to key NASA officials, managers and engineers (both within and outside the Center), the incumbent influences the policies of NASA, other government agencies, and external participants. The results of these activities have a direct and long-term effect on NASA's ability to achieve mission objectives which impact a large user community on both a national and international level, and expand our knowledge of the earth as a system.

Factor 6 - Personal Contacts

The Observatory Manager has daily personal contact with the members of the Project staff as well as discipline support personnel from the various GSFC codes that are part of the program. He/she will also have daily contact with the senior managers and technical staff at the industrial contractor's plant. He/she will have frequent contact with Division Chiefs and Branch Heads at GSFC and various senior technical and management personnel at other NASA Centers. The Observatory Manager will have contact with the senior management at GSFC (Director's of), with division managers of NASA Headquarters, and with senior scientists and managers from U.S. and European institutions on an as-needed basis. The contacts occur in a variety of settings and contexts requiring an in-depth understanding of technical and managerial factors which impact the successful accomplishment of the mission.

Factor 7 - Purpose of Contacts

The prime purpose of these contacts is to provide leadership, management, technical direction and guidance in planning and implementing the observatory system and justify, negotiate, and settle matters involving significant or controversial technical and programmatic issues. These issues are usually varying and potentially have a large impact, requiring the incumbent to achieve satisfactory results relative to the objectives of the mission. Provides technical direction, and coordinates the efforts of contractors, other government and external organizations, other NASA centers and other GSFC organizations. Maintains a good working relationship with national and international participants through consultation, advice, mutual discussion and conferences to identify areas of common development and to monitor common progress. Coordinates requirements and resolves conflicting technical views arising from Joint Working Groups involving other U.S. government agencies and foreign participants. Supports international meetings, both management and technical in nature.

Factor 8 - Physical Demands

Typical engineering and management work is required. This includes working at a desk, attendance at meetings and conferences at GSFC, NASA Headquarters, other NASA facilities, industrial facilities, etc. Significant domestic travel is required. No special physical demands are required.

Factor 9 – Work Environment

During the design phase, the normal work environment involves normal safety precautions typical of such places as offices, meeting rooms, and laboratories. During the integration, test, and launch phases, work involves longer hours at moderate risk, which requires special safety precautions.